

CLAIMS

1. (currently amended) A method of aligning a substrate to an exposure system, the method comprising:

disposing a patterned substrate on a stage of an exposure system, the exposure system having an alignment routine including;

locating a first point of interest on the patterned substrate;

scanning a first area on the patterned substrate proximate the first point of interest for a first unique feature;

defining a periodicity for the patterned substrate;

locating a second point of interest on the patterned substrate based on the periodicity;

scanning a second area on the patterned substrate proximate the second point of interest for a second unique feature corresponding to the first unique feature, wherein the first unique feature is saved as an alignment image for use in locating the second unique feature in the second area;

gathering alignment data with respect to the patterned substrate from at least scanning the first and second areas; and

determining substrate position relative to the exposure system from alignment data of at least the first and second scanned areas.

2. (original) The method as recited in claim 1, further comprising using the alignment data for aligning the substrate.

3. (original) The method as recited in claim 1, further comprising exposing the substrate with the exposure system.

4. (original) The method as recited in claim 1, wherein the substrate is a semiconductor wafer.

5. (original) The method as recited in claim 1, wherein said first and second unique features include alignment marks on the substrate.

6. (original) The method as recited in claim 1, wherein gathering alignment data includes mapping first and second points of interests and corresponding unique features to determine an orientation of the substrate.

7. (original) The method as recited in claim 1, wherein scanning the first area includes a raster movement around the first point of interest until the first unique feature is within a field of view.

8. (cancelled)

9. (original) The method as recited in claim 1, wherein the alignment routine is configured to provide a path for automatic correction should the alignment routine fail to align.

10. (original) The method as recited in claim 1, wherein the substrate comprises a plurality of exposure fields, wherein the method comprises at least one of inspecting and measuring at least one point of interest in each field of a plurality of exposure fields.

11. (original) The method as recited in claim 1, wherein the substrate comprises a plurality of exposure fields, wherein each exposure field comprises at least one unique feature.

12. (currently amended) A method of aligning a patterned substrate having a plurality of segments and measuring the same, the method comprising:

defining a point of interest for each segment of the patterned substrate;

locating a first point of interest in a first segment of the patterned substrate;
scanning a first area of the patterned substrate proximate the first point of interest for a first unique feature;
saving a scanned image of the first area;
defining a periodicity for the patterned substrate;
locating a second point of interest in a second segment of the patterned substrate based on the periodicity;
scanning a second area of the patterned substrate proximate the second point of interest for a second unique feature corresponding to the first unique feature, wherein the first unique feature is saved as an alignment image for use in locating the second unique feature in the second area;
mapping the alignment of the substrate with respect to tooling in which it is disposed with;
measuring the second point of interest; and
locating a third point of interest in a third segment based on the periodicity.

13. (original) The method as recited in claim 12, further comprising exposing the substrate with an exposure system.

14. (original) The method as recited in claim 12, wherein the substrate is a semiconductor wafer.

15. (original) The method as recited in claim 12, wherein said first and second unique features include alignment marks on the substrate.

16. (original) The method as recited in claim 12, wherein the mapping the alignment determines an orientation of the substrate relative to the tooling.

17. (original) The method as recited in claim 12, wherein scanning the first area includes a raster movement around the first point of interest until the first unique feature is within a field of view.

18. (original) The method as recited in claim 12, wherein the substrate comprises a plurality of exposure fields each corresponding to a respective segment, wherein the method comprises at least one of inspecting and measuring at least one point of interest in each field of a plurality of exposure fields.

19. (original) The method as recited in claim 12, wherein the substrate comprises a plurality of exposure fields each corresponding to a respective segment, wherein each exposure field comprises at least one unique feature.

20. (original) The method as recited in claim 19, wherein the at least one unique feature is similarly oriented with respect to each corresponding segment.